

IN THE CLAIMS:

~~Title: Neutral data computer control system for a machine tool for producing workpieces having a helicoidal generated surface with data carriers, data carrier signals, a computer system, a computer program and computer program products, and also an associated machine tool~~

Claims 1-33 (Cancelled)

34. (Currently Amended) Data carrier or electronic carrier signal (3) with machine control parameters for reading into a multiaxis machine tool (2) having a workpiece holder for receiving a workpiece, a tool, activatable mechanical axes for machining the workpiece or for positioning the workpiece and the tool in relation to each other, an open-loop and/or closed-loop control device for activating axes, and at least one virtual axis which can be parameterized as a guiding axis for other axes and then serves only for the synchronization of these other axes, ~~according to one of Claims 1 to 32,~~ characterized in that on the data carrier or the electronic carrier signal there is at least one data structure which has a data field which allows the parameterization of the virtual axis as a guiding axis for other axes, and the data carrier or the electronic carrier signal (3) activates the machine tool (2) during the reading-in or after the reading-in by means of this data structure such that the other axes are synchronized in their positioning with the aid of the virtual guiding axis. ~~on the basis of the method according to Claim 33.~~
35. (Currently Amended) Data carrier or electronic carrier signal (3) with machine control parameters according to Claim 34 for reading into ~~[[a]]~~ the multiaxis machine tool (2) ~~according to one of Claims 1 to 32,~~ characterized in that on the data carrier or the electronic carrier signal there is at least one data structure which also allows the parameterization of a mechanical axis as a guiding axis for other axes.
36. (Currently Amended) Data carrier or electronic carrier signal (3) with machine control parameters according to Claim 34 ~~or 35~~ for reading into ~~[[a]]~~ the multiaxis machine tool (2) ~~according to one of Claims 1 to 32,~~ characterized in that on the data carrier or the electronic carrier signal there is at least one data structure which is intended for

receiving a definition of a function or relation for the formation of the virtual axis by the open-loop and/or closed-loop control device.

37. (Currently Amended) Data carrier or electronic carrier signal (3) with machine control parameters according to Claim 34 ~~one of Claims 34 to 36~~ for reading into [[a]] the multiaxis machine tool (2) ~~according to one of Claims 1 to 32~~, characterized in that on the data carrier or the electronic carrier signal there is at least one data structure which is intended for receiving a definition of a function or relation for the activation of the respective mechanical axis by the open-loop and/or closed-loop control device.
38. (Currently Amended) Data carrier or electronic carrier signal (3) with machine control parameters according to Claim 37 for reading into [[a]] the multiaxis machine tool (2) ~~according to one of Claims 1 to 32~~, characterized in that the data structure has at least one data field for the identification of at least one predefined type of function or relation, preferably a type of polynomial function, a type of circular relation or a type of table of coordinates, which is used for the definition of the function or relation of the respective mechanical axis.
39. (Currently Amended) Data carrier or electronic carrier signal (3) with machine control parameters according to Claim 36 ~~one of Claims 36 to 38~~ for reading into [[a]] the multiaxis machine tool (2) ~~according to one of Claims 1 to 32~~, characterized in that on the data carrier or the electronic carrier signal there is at least one data structure which is intended for receiving an identification of the workpiece flank being machined by the activation of the respective mechanical axis by the open-loop and/or closed-loop control device, preferably an identification for a flank on the right or on the left.
40. (Currently Amended) Data carrier or electronic carrier signal (3) with machine control parameters according to Claim 34 ~~one of Claims 34 to 39~~ for reading into [[a]] the multiaxis machine tool (2) ~~according to one of Claims 1 to 32~~, characterized in that on the data carrier or the electronic carrier signal there is at least one data structure which combines at least one group of machine control parameters corresponding to a partial region of the workpiece, as a segment under a common segment identification, preferably a segment number.

41. Data carrier or electronic carrier signal (3) with machine control parameters according to Claim 40 for reading into ~~[[a]]~~ the multiaxis machine tool (2) ~~according to one of Claims 1 to 32~~, characterized in that such a group of machine control parameters for which the same axis is parameterized as the guiding axis are always combined as a segment.
42. (Cancelled)
43. (Cancelled)
44. (Currently Amended) Computer system (1) for generating machine control parameters for a multiaxis machine tool (2) having a workpiece holder for receiving a workpiece, a tool, activatable mechanical axes for machining the workpiece or for positioning the workpiece and the tool in relation to each other, and also an open-loop and/or closed-loop control device for activating axes, and at least one virtual axis which can be parameterized as a guiding axis for other axes and then serves only for the synchronization of these other axes, and means for reading machine control parameters ~~according to one of Claims 1 to 32 and 42~~ with at least one data processing unit and at least one memory, characterized in that the data processing unit is set up in programming terms in such a way that it generates at least one data carrier or an electronic carrier signal (3) with machine control parameters and wherein the data carrier or electronic carrier signal includes at least one data structure which has a data field which allows the parameterization of the virtual axis as a guiding axis for other axes, and the data carrier or the electronic carrier signal (3) activates the machine tool (2) during the reading-in or after the reading-in by means of this data structure. ~~according to one of Claims 34 to 41.~~
45. (Currently Amended) Computer program which has instructions which are set up for generating machine control parameters as defined in Claim 44. ~~carrying out the method according to Claim 43.~~
46. (Currently Amended) Computer program product which has a computer-readable medium with computer program coding means, with which, after loading the computer program, a computer is made by the program for generating machine

control parameters as defined in Claim 44. to carry out the method according to Claim 43.

47. (Currently Amended) Computer program product which has a computer program on an electronic carrier signal, with which, after loading the computer program, a computer is made by the program for generating machine control parameters as defined in Claim 44. to carry out the method according to Claim 43.
48. (Currently Amended) Neutral data computer control system for a multiaxis machine tool for producing workpieces having a helicoidal generated surface with a computer system (1) for generating machine control parameters for a multiaxis machine tool (2) having a workpiece holder for receiving a workpiece, a tool, activatable mechanical axes for machining the workpiece or for positioning the workpiece and the tool in relation to each other, and also an open-loop and/or closed-loop control device for activating axes, and at least one virtual axis which can be parameterized as a guiding axis for other axes and then serves only for the synchronization of these other axes, according to one of Claims 1 to 32 and 42 with and means for reading machine control parameters for the open-loop and/or closed-loop control device with at least one data processing unit and at least one memory, the data processing unit being set up in programming terms in such a way that it generates at least one data carrier or an electronic carrier signal (3) with machine control parameters, and at least one data structure which has a data field which allows the parameterization of the virtual axis as a guiding axis for other axes, and the data carrier or the electronic carrier signal (3) activates the machine tool (2) during the reading-in or after the reading-in by means of this data structure on the data carrier or electronic carrier signal therein. according to one of Claims 34 to 41, or a computer program according to Claim 45, or a computer program product according to Claim 46 or 47, and at least one multiaxis machine tool (2) according to one of Claims 1 to 32 and 42.
49. (New) Neutral data computer control system for a multiaxis machine tool for producing workpieces having a helicoidal generated surface with a computer system (1) for generating machine control parameters for a multiaxis machine tool (2) having a workpiece holder for receiving a workpiece, a tool, activatable mechanical axes for machining the workpiece or for positioning the workpiece and the tool in relation to each other, and also an open-loop and/or closed-loop control device for activating

axes, and means for reading machine control parameters for the open-loop and/or closed-loop control device and at least one virtual axis which can be parameterized as a guiding axis for other axes and then serves only for the synchronization of these other axes, with a computer program according to Claim 45.

50. (New)     Neutral data computer control system for a multiaxis machine tool for producing workpieces having a helicoidal generated surface with a computer system (1) for generating machine control parameters for a multiaxis machine tool (2) having a workpiece holder for receiving a workpiece, a tool, activatable mechanical axes for machining the workpiece or for positioning the workpiece and the tool in relation to each other, and also an open-loop and/or closed-loop control device for activating axes, and means for reading machine control parameters for the open-loop and/or closed-loop control device and at least one virtual axis which can be parameterized as a guiding axis for other axes and then serves only for the synchronization of these other axes, with a computer product according to Claim 46.